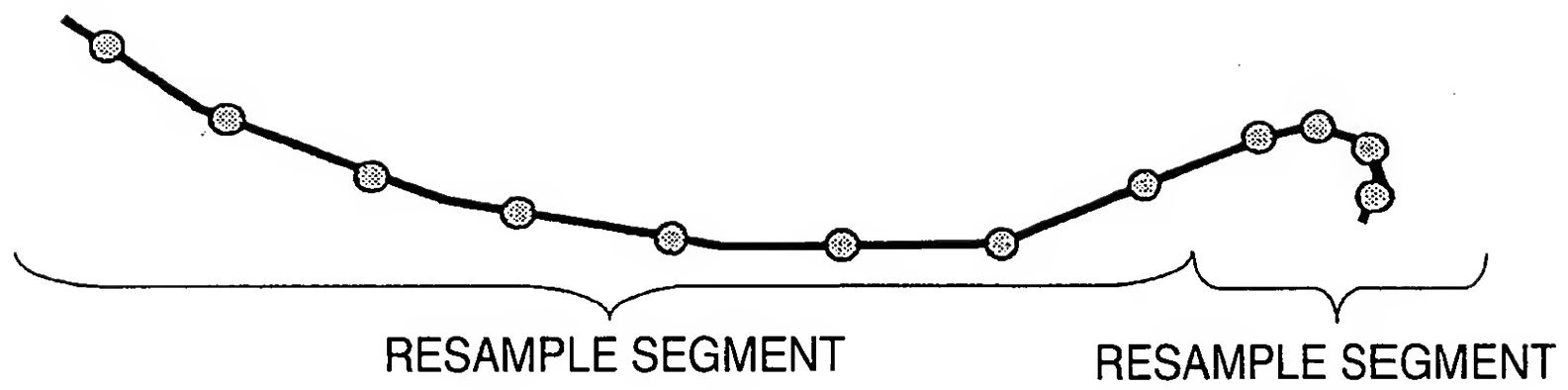
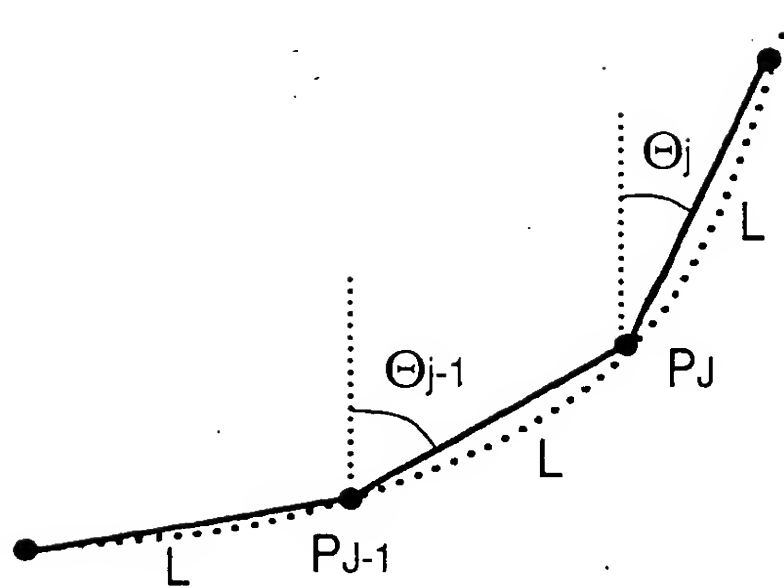


**FIG. 1**



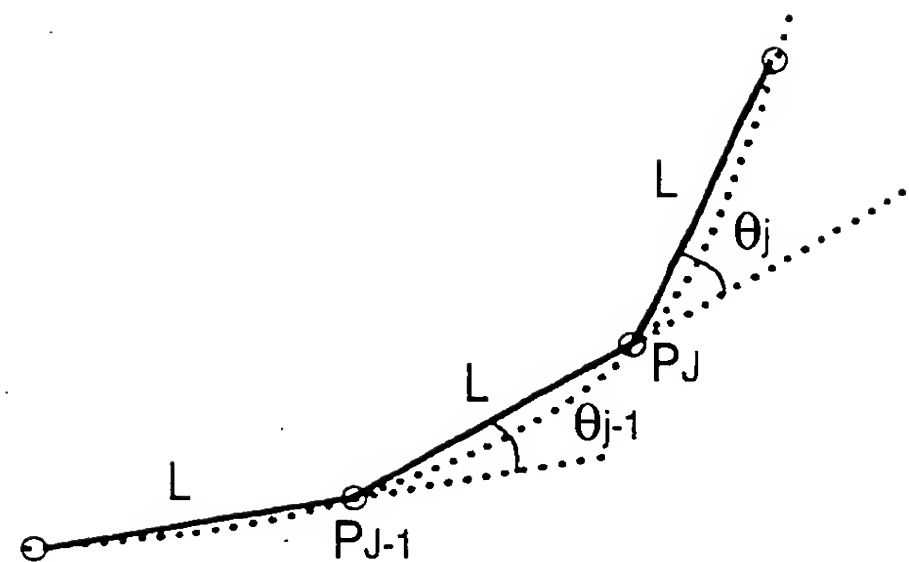
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FIG. 2A



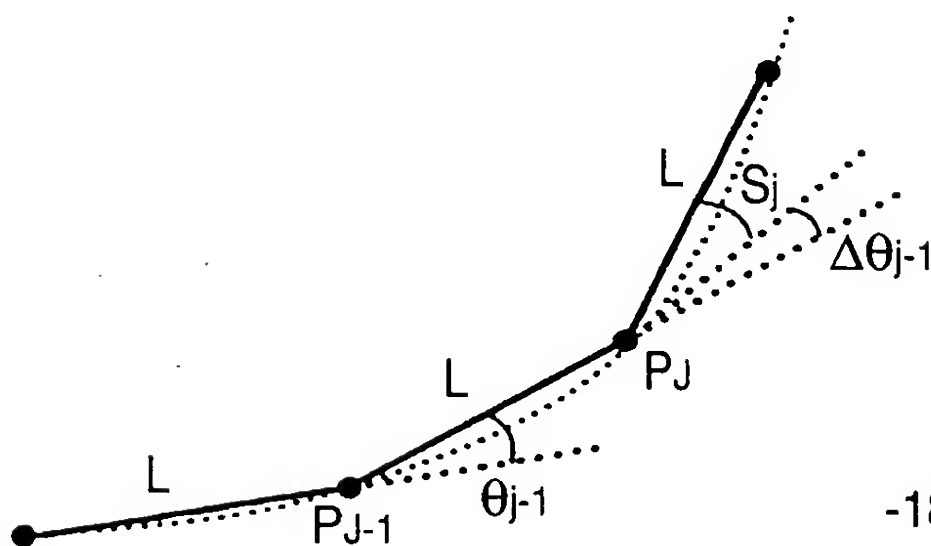
RESAMPLE PATH DATA AT  
EQUAL DISTANCE L

FIG. 2B



REPRESENT ANGLE COMPONENT  
BY DEVIATION ANGLE

FIG. 2C



REPRESENT DEVIATION ANGLE BY  
STATISTICAL PREDICTION VALUE DIFFERENCE

FIG. 2D

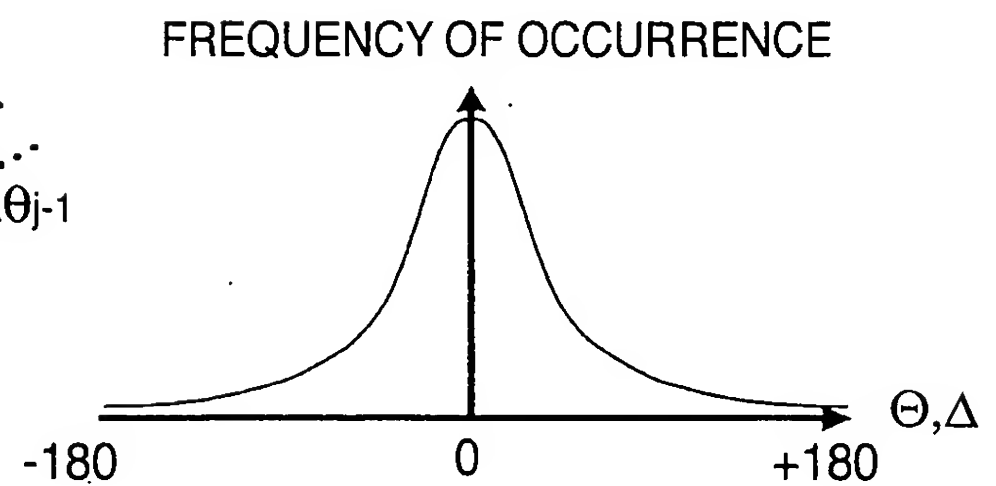
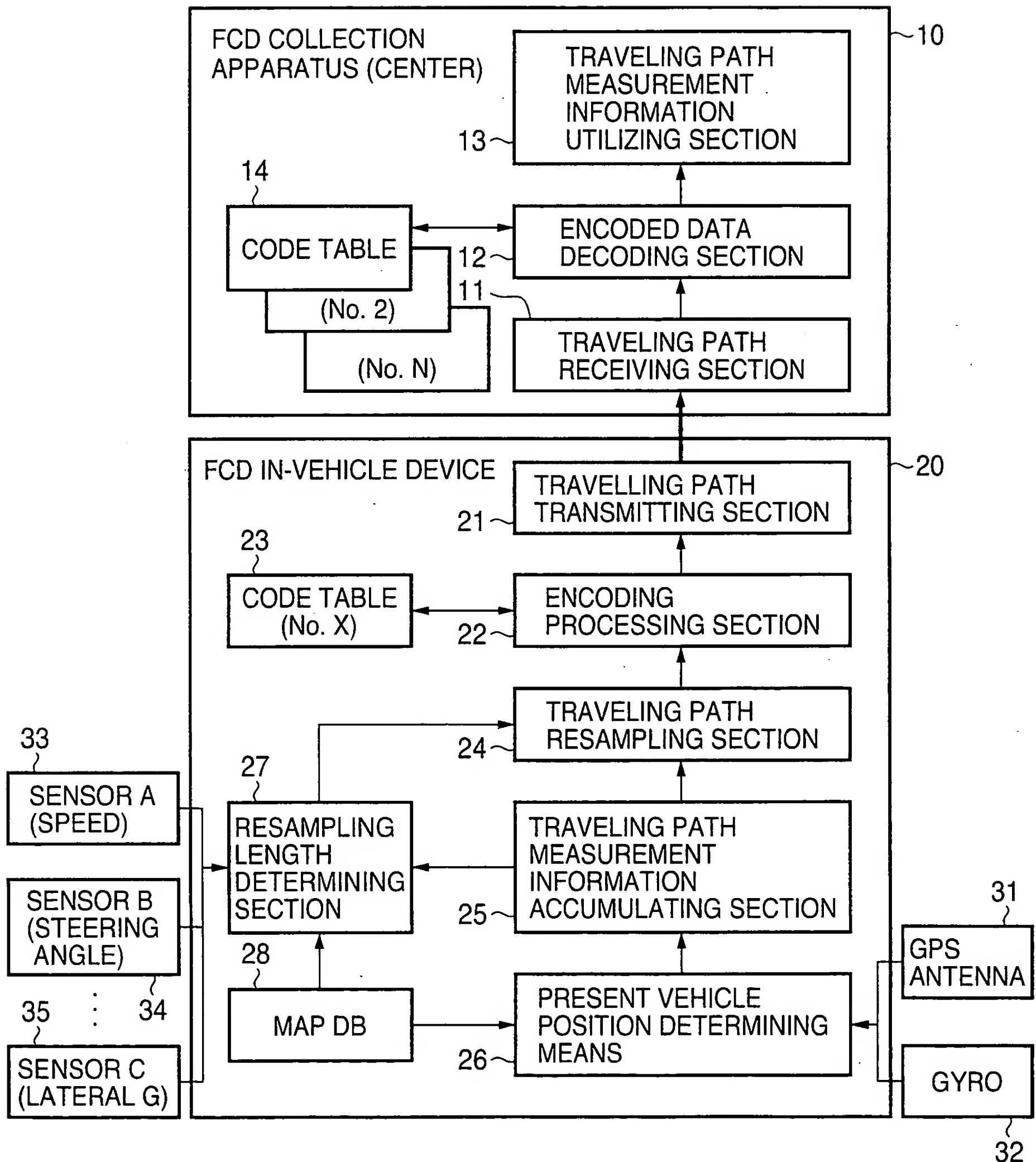


FIG. 3

| SPECIAL CODE               |                                    | CODE   | ADDITIONAL BIT                |  |
|----------------------------|------------------------------------|--------|-------------------------------|--|
| SEGMENT LENGTH CHANGE CODE |                                    | 101    | 3(40/80/160/.../5120m         |  |
| EOD CODE                   |                                    | 1100   | 0                             |  |
| INPUT VALUE                |                                    | CODE   | ADDITIONAL BIT                | RANGE OF $\Delta\theta$ VALUE ( $^{\circ}$ ) |
| RUN LENGTH                 | $\Delta\theta$ VALUE( $^{\circ}$ ) |        |                               |  |
| 0                          | 0                                  | 0      | 0                             | -1~+1  |
| 5                          | 0                                  | 100    | 0                             | "  |
| 10                         | 0                                  | 1101   | 0                             | "  |
| 0                          | $\pm 3$                            | 1110   | 1<br>(FOR IDENTIFYING $\pm$ ) | $\pm 2 \sim 4$                               |
| 0                          | $\pm 6$                            | 111100 | 1<br>(FOR IDENTIFYING $\pm$ ) | $\pm 5 \sim 7$                               |
| 0                          | $\pm 9$                            | 111101 | 1<br>(FOR IDENTIFYING $\pm$ ) | $\pm 8 \sim 10$                              |
| }                          |                                    |        |                               |  |

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FIG. 4



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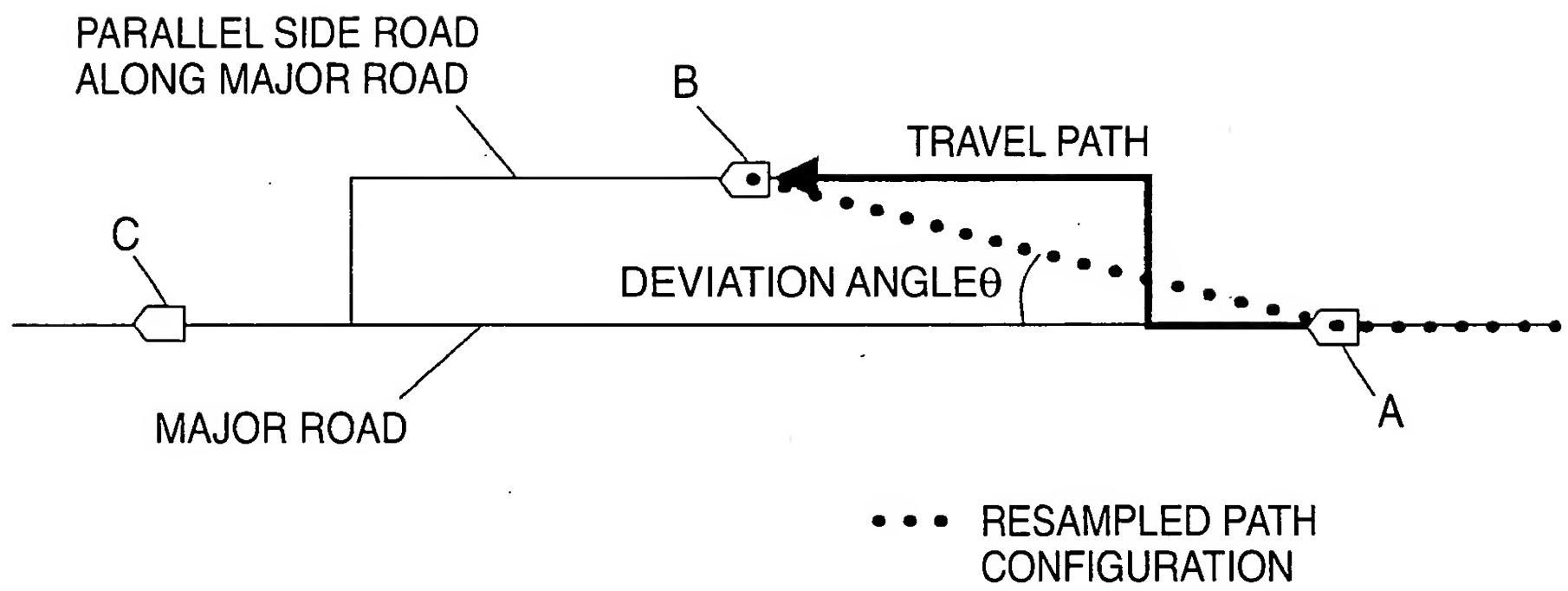
## FIG. 5

### EXAMPLE OF TRANSMISSION DATA FORMAT

|   |
|---|
| VEHICLE ID INFORMATION  |
| IDENTIFICATION NUMBER OF THE CODE TABLE IN USE  |
| ENCODING METHOD INSTRUCTION NUMBER  |
| NUMBER OF SAMPLING LOCATION<br>POINTS OF POSITIONAL INFORMATION   |
| ABSOLUTE LONGITUDE AND LATITUDE OF<br>THE LAST MEASURED LOCATION  |
| ABSOLUTE ORIENTATION OF BETWEEN LAST<br>LOCATION → PREVIOUS LOCATION  |
| ENCODED DATA OF TRAVELING PATH<br>(INCLUDING BIT STRING OF ENCODED $\theta$ , $\Delta\theta$ ;<br>AND SEGMENT LENGTH CHANGE CODE) |

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FIG. 6



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FIG. 7A

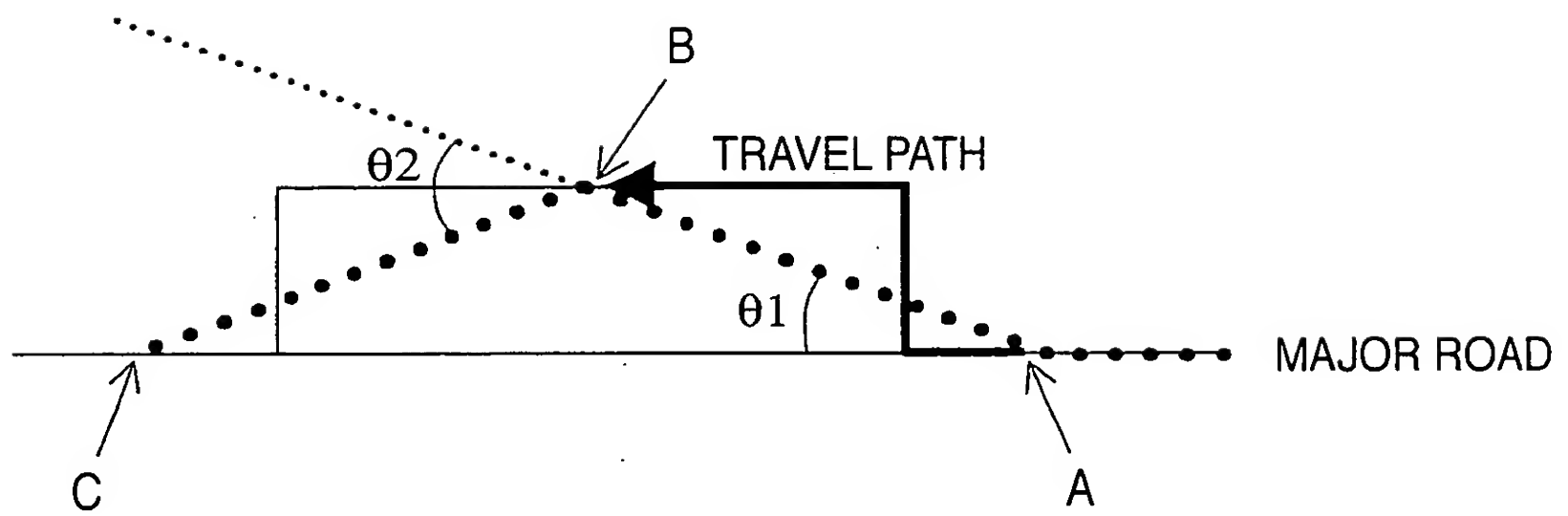


FIG. 7B

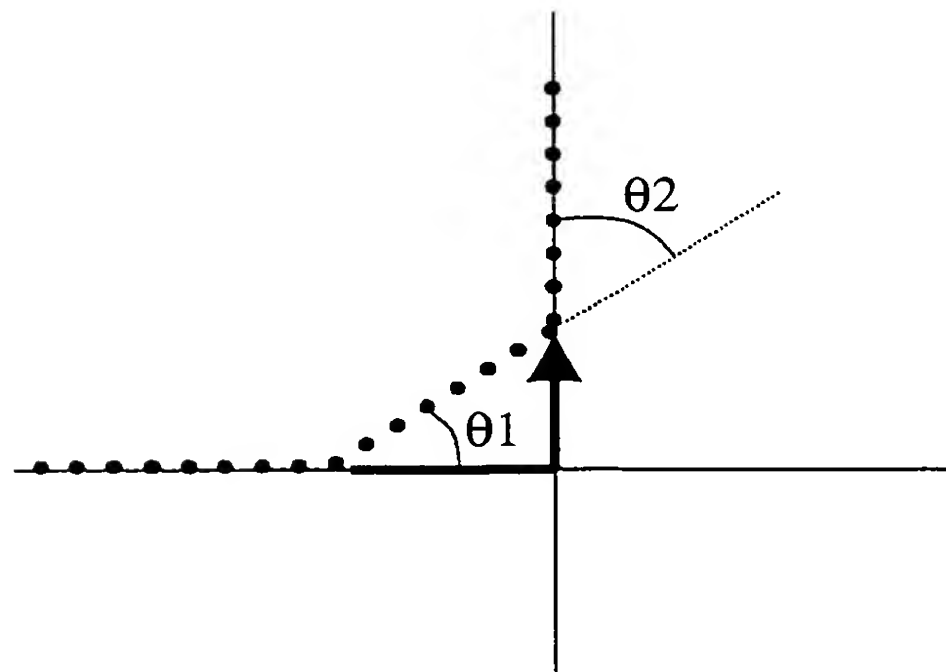


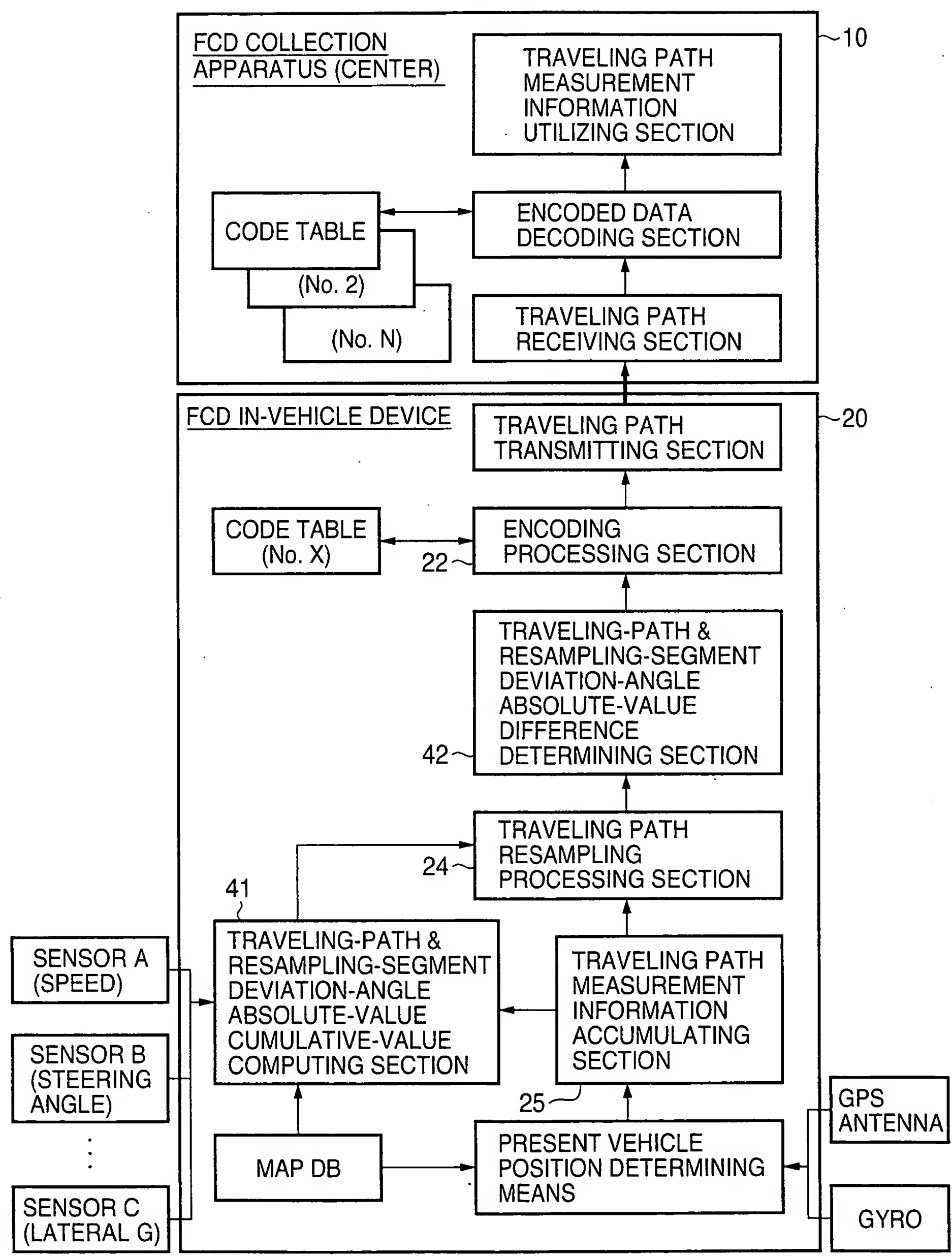
FIG. 8

| SPECIAL CODE   | CODE    | ADDITIONAL BIT  |
|--|---------|---|
| SEGMENT LENGTH CHANGE CODE   | 101     | 3 (40/80/160/.../5120m)   |
| CODE INDICATING THAT A DIFFERENCE HAS OCCURRED BETWEEN DEVIATION ANGLE OF RESAMPLED TRAVELING PATH SHAPE AND CUMULATIVE VALUE OF DEVIATION ANGLE ABSOLUTE VALUES | 111110  | 9 (0~512°)<br>CUMULATIVE VALUE OF DEVIATION ANGLE ABSOLUTE VALUES OF TRAVELING PATH |
| EOD CODE   | 1100    | 0   |
| INPUT VALUE  | CODE    | ADDITIONAL BIT  |
| RUN LENGTH   | θ VALUE | RANGE OF θ VALUE (°)  |
| 0  | 0       | -1~±1   |
| 5  | 0       | 〃   |
| 10   | 0       | 〃   |
| 0  | ±3      | 1<br>(FOR IDENTIFYING ±)  |
| 0  | ±6      | 1<br>(FOR IDENTIFYING ±)  |
| 0  | ±9      | 1<br>(FOR IDENTIFYING ±)  |
| }  |         |   |



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FIG. 9



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FIG. 10

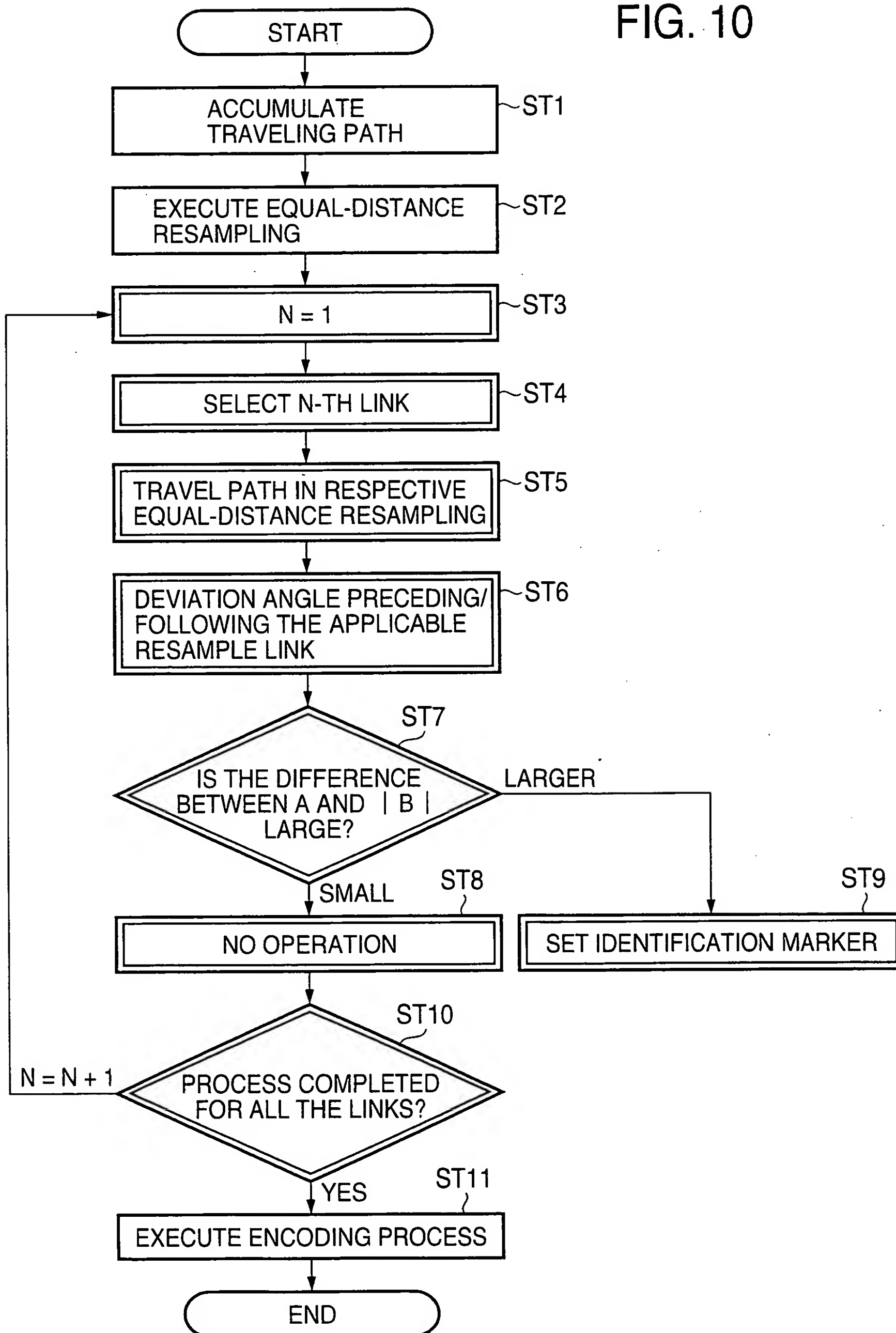
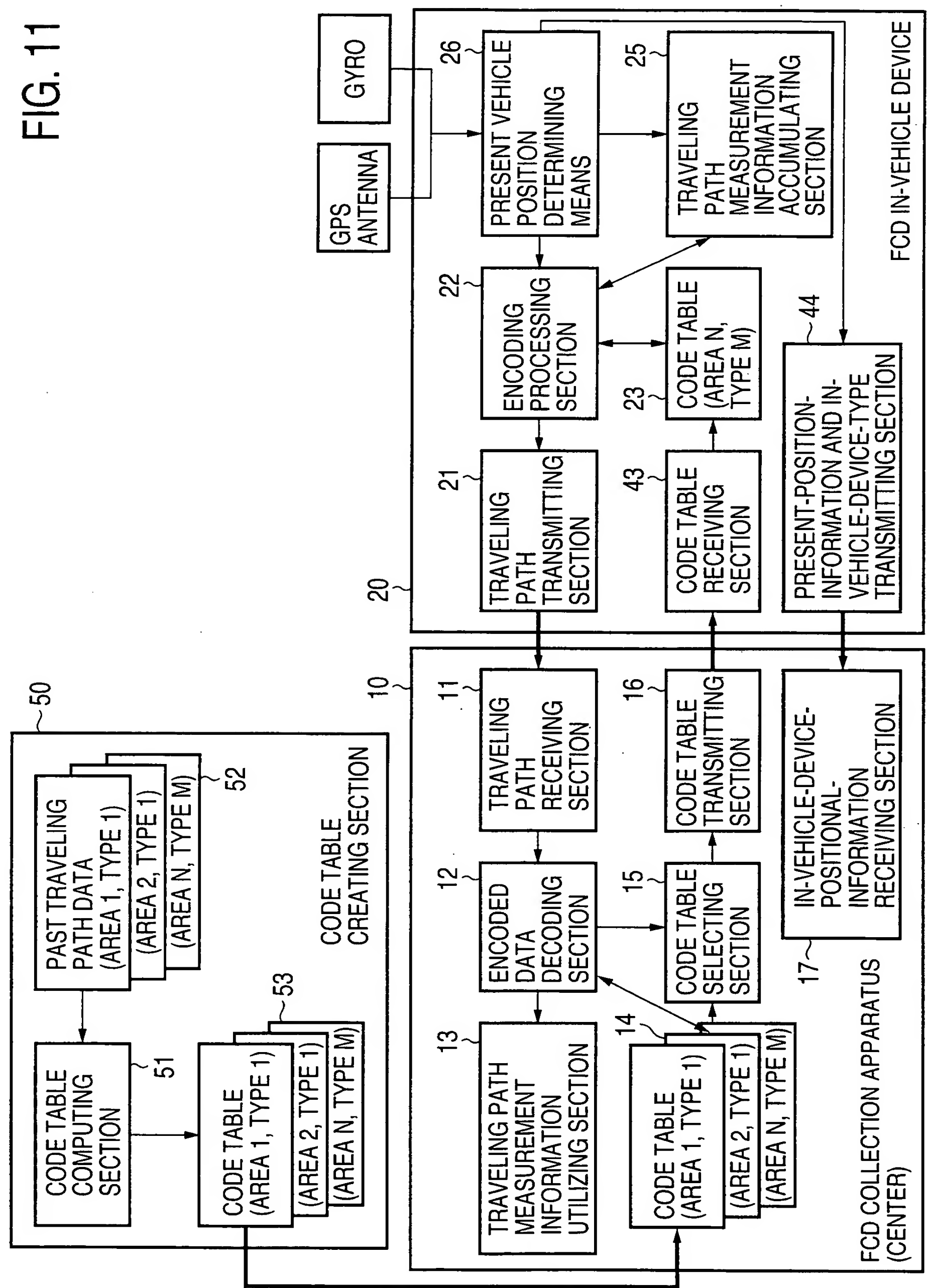
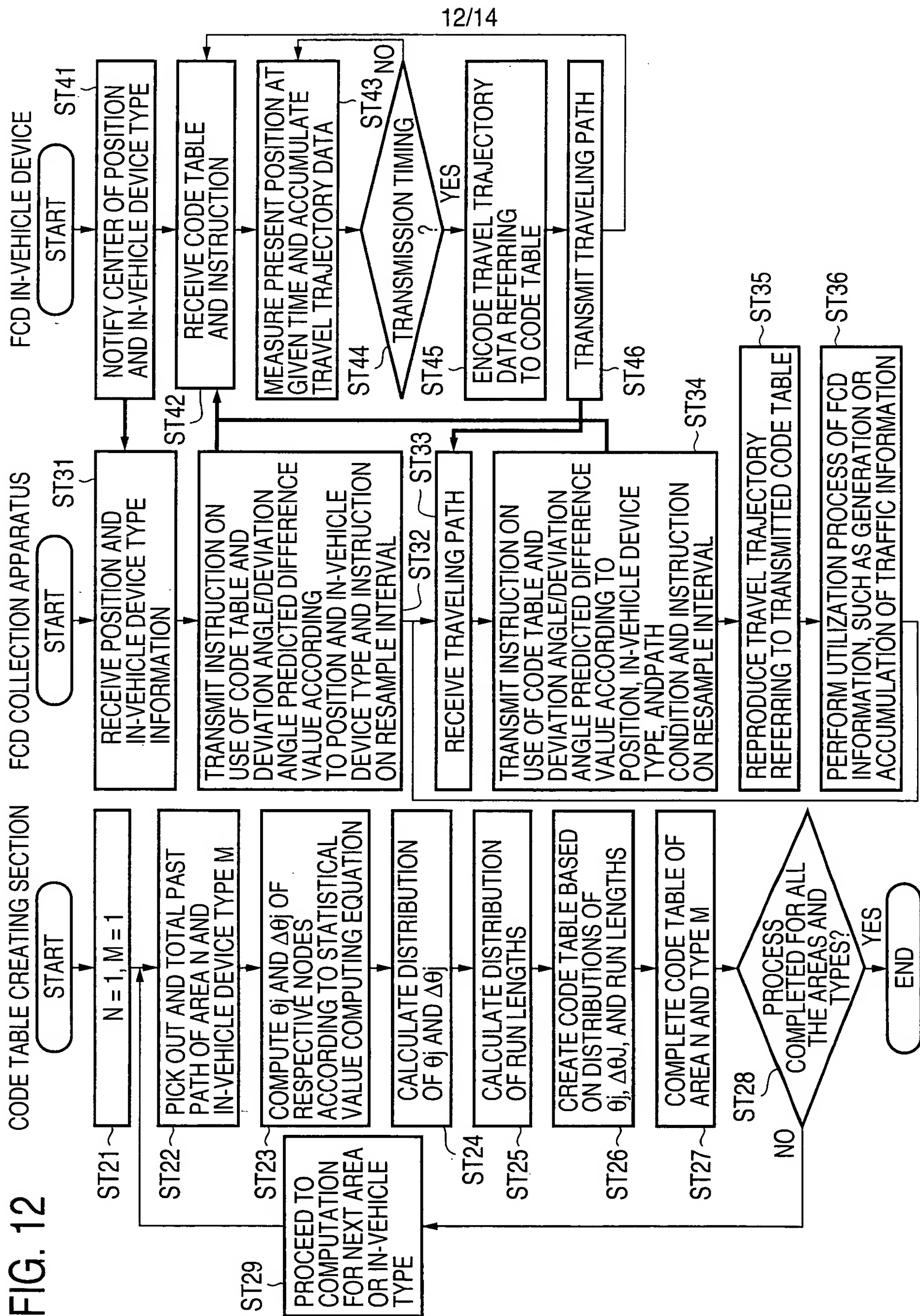


FIG. 11





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FIG. 13A

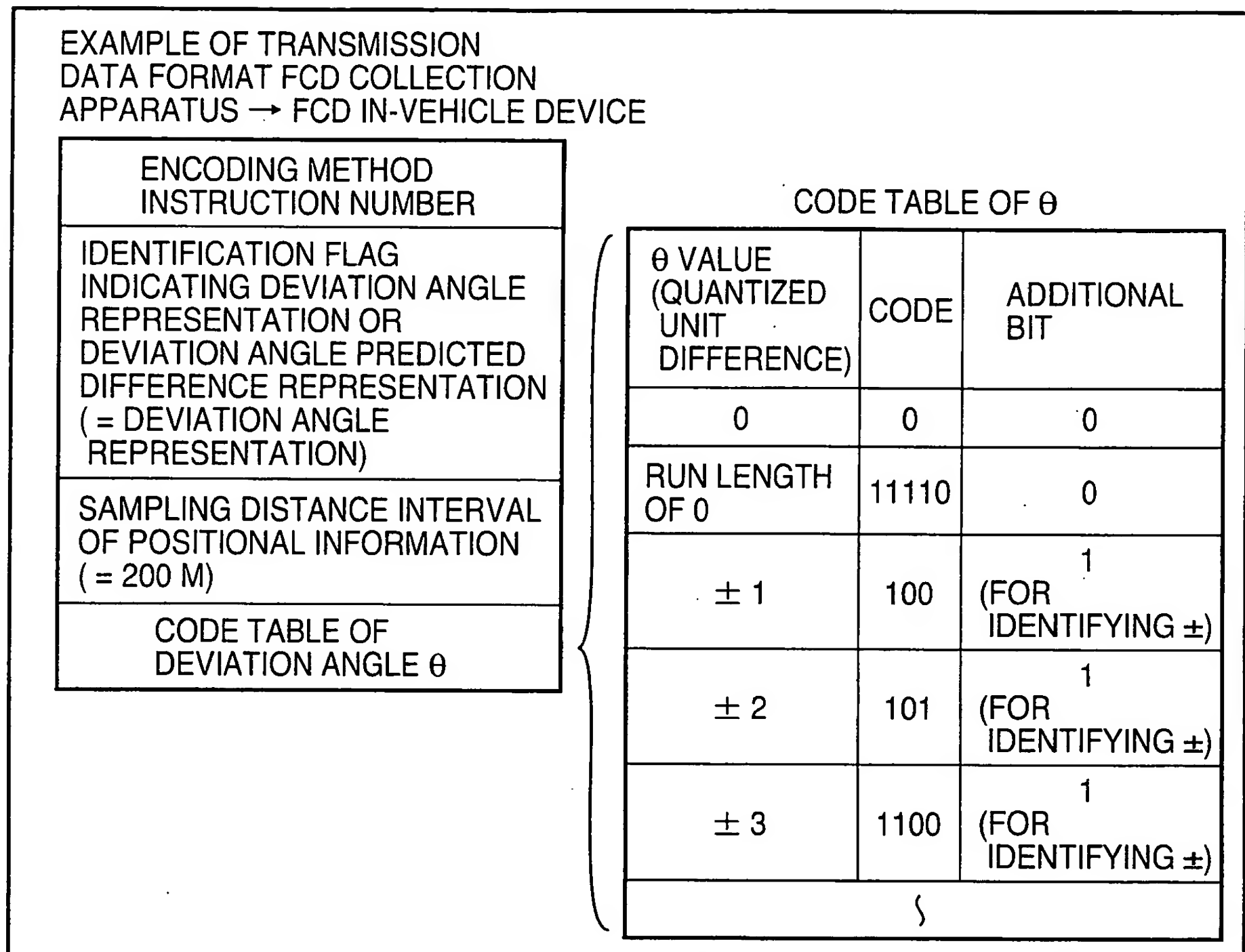


FIG. 13B

FCD IN-VEHICLE DEVICE → FCD COLLECTION

|   |
|---|
| VEHICLE ID INFORMATION  |
| ENCODING METHOD INSTRUCTION NUMBER  |
| NUMBER OF SAMPLING LOCATION POINTS FOR $\theta$   |
| ENCODED DATA OF DEVIATION ANGLE $\theta$ WITH RESPECT<br>TO PREVIOUS SAMPLING LOCATION<br>(BIT STRING IN WHICH $\theta$ IS ENCODED) |
| MEASUREMENT INFORMATION<br>(SPEED ,FUEL CONSUMPTION ,ETC.)  |

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FIG. 14

